



KATHLEEN A. THUNER

AGRICULTURAL COMMISSIONER
SEALER OF WEIGHTS
AND MEASURES

County of San Diego

DEPARTMENT OF AGRICULTURE, WEIGHTS & MEASURES
5555 Overland Ave., Suite 3101, San Diego, CA 92123-1292

AGRICULTURE
(858) 694-2739
FAX
(858) 565-7046
WEIGHTS & MEASURES
(858) 694-2778

SUDDEN OAK DEATH FACTS

Pat Nolan, Supervising Plant Pathologist/Nematologist,
Dept. of Agriculture, Weights and Measures, County of San Diego

CAUSAL ORGANISM: *Phytophthora ramorum*, optimal growth temperature is 68 F. It is killed at temperatures of 95 F and above.

SYMPTOMS: Bleeding, sunken cankers on tree branches and trunk of oak and tanoak followed by rapid (within 6-8 weeks under optimal conditions, can take years under warmer, drier conditions) death of oaks. Leaf spots, tip dieback, or blights occur on ornamental hosts. These symptoms are often very minor in typical southern California weather conditions.

CONFIRMED HOSTS: Andromedas (*Pieris spp.*), maidenhair ferns (*Adiantum spp.*), camellias (*Camellia spp.*), sweet chestnut (*Castanea sativa*), Scotch heather (*Calluna vulgaris*), European ash (*Fraxinus excelsior*), European beech (*Fagus sylvatica*), griselinia (*Griselinia littoralis*), mountain laurel (*Kalmia latifolia*), bay laurel (*Laurus nobilis*), false Solomon's seal (*Maianthemum racemosum*), michelia (*Michelia doltsopa*), Persian ironwood (*Parrotia persica*), red tip photinia (*Photinia fraseri*), coast live oak (*Quercus agrifolia*), canyon live oak (*Q. chrysolepsis*), European turkey oak (*Q. cerris*), southern red oak (*Q. falcata*), Holm oak (*Q. ilex*), California black oak (*Q. kelloggii*), Shreve oak (*Q. parvula* var. *shrevei*), tanoak (*Lithocarpus densiflora*), rhododendron and azalea (*Rhododendron spp.*), goat willow (*Salix caprea*), lilac (*Syringa vulgaris*), European yew (*Taxus baccata*), evergreen huckleberry (*Vaccinium ovatum*), California buckeye and horse chestnut (*Aesculus californica* and *A. hippocastanum*), madrone (*Arbutus menziesii*), manzanita (*Arctostaphylos manzanita*), California bay laurel (*Umbellularia californica*), California coffeeberry and cascara (*Frangula spp.*), toyon (*Heteromeles arbutifolia*), California honeysuckle (*Lonicera hispidula*), bigleaf and planetree maples (*Acer macrophyllum* and *A. pseudoplatanus*), viburnum (*Viburnum spp.*), coast redwood (*Sequoia sempervirens*), Douglas fir (*Pseudotsuga mezesii*), western star flower (*Trientalis latifolia*), witch hazel (*Hamamelis virginiana*), and wood rose (*Rosa gymnocarpa*). Many other plants are being tested. This list is expected to grow.

TRANSMISSION: Probably by spores spread in wind and rain. Possibly on unprocessed wood and wood products. Possibly on soil in plants, on tires and footwear.

DISTRIBUTION IN CALIFORNIA: The counties of Alameda, Contra Costa, Humboldt, Lake, Marin, Mendocino, Monterey, Napa, San Mateo, San Francisco, Santa Clara, Santa Cruz, Solano, Sonoma

OTHER LOCATIONS: Curry County, Oregon and many countries in Europe, including Germany, Italy, France, Spain, Belgium, the Netherlands, Poland, Sweden, and the United Kingdom

WEBSITES: California Oak Mortality Task Force: suddenoakdeath.org
Integrated Hardwood Management Program: danr.ucop.edu/ihrmp